

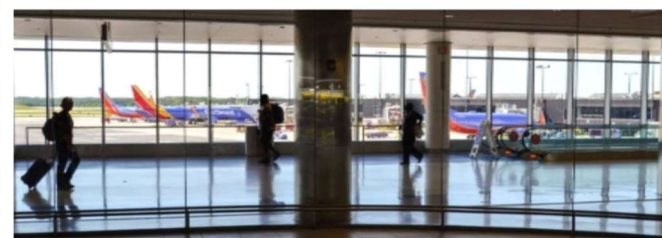
# QUARTERLY NOISE REPORT SECOND QUARTER 2018



The Maryland Department of Transportation, Maryland Aviation Administration  
OFFICE OF ENVIRONMENTAL SERVICES



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## Definitions

**Airport Noise Zone (ANZ):** An area of land surrounding the airport within which noise levels are equal to or greater than DNL 65 dBA.

**Code of Maryland Regulations (COMAR):** Requires MDOT MAA to control development in areas where noise levels are DNL 65 dBA or more.

**Decibel (dBA):** A unit of measurement of sound pressure adjusted for the human ear's response to particular frequencies.

**Day-Night Average Sound Level (DNL or Ldn):** A descriptor of 24-hour noise (midnight to midnight) that adds a ten-decibel (dB) nighttime penalty to noise events which occur between the hours of 10 p.m. and 7 a.m. to account for the intrusive nature of noise at night.

**Maryland Department of Transportation Maryland Aviation Administration (MDOT MAA):** Operator of Baltimore Washington International Thurgood Marshall Airport (BWI Marshall).

## Summary

This report provides a review of the aviation noise abatement program for the 2<sup>nd</sup> Quarter of 2018 (April 1 to June 30). Included in this report is information on jet aircraft operations, observance rates for noise abatement procedures, complaints received about aircraft noise, and community outreach efforts by the Maryland Department of Transportation Maryland Aviation Administration (MDOT MAA). The table below displays various measurements in comparison to the 2<sup>nd</sup> Quarter of 2017.

Measurement	2 <sup>nd</sup> Quarter (2018)	2 <sup>nd</sup> Quarter (2017)
Average Daily Jet Operations	708	679
Average Daily Night-time Operations	134	108
Complaints to Noise Office	4,965	3,160
West Flow Operations	60%	63%

## News Items of Interest

⇒ Fraport Maryland (formerly AIRMALL) has announced the following food and beverage openings at Baltimore Washington International Thurgood Marshall Airport.

- **Martini** (Concourse A) opened on Friday, June 29, 2018. Martini is an upscale bar specializing in delicious cocktails, house-infused liquors and signature martinis. Bites include flat breads, soups and salads, and plates ranging from Buffalo wings and sliders to a charcuterie board.
- **Gachi House of Sushi** (Concourse B) reopened on Friday, June 29, 2018. Gachi provides fresh sushi and authentic Asian cuisine. Gachi offering an exceptional dining experience through innovative Japanese Infused Dishes and great service at a comfortable sleek atmosphere. From the "Grab 'N Go" unit, they offer prepackaged sushi rolls and appetizers to accommodate travelers with quick service.
- **Farmer's Market** (Concourse B) opened on Thursday, June 21, 2018. Farmer's Market specializes in "fresh from the market" preparations and produce with abundant stocks of fresh fruit and vegetable snacks. Enjoy fresh, locally produced snacks, plus a full array of grab-and-go sandwiches, salads, and healthy snacks.



⇒ Travel retailer Hudson Group has agreed a three-year extension for its retail operations at Baltimore-Washington International Thurgood Marshall Airport (BWI), Maryland. Awarded by Fraport Maryland, the extension covers more than 15,900ft<sup>2</sup> in retail space, and includes the conversion of two Hudson News locations to Hudson store concepts. "Our world-class concessions program delivers a high-level of service and quality products," said Ricky Smith, executive director of BWI Marshall Airport. "We are pleased to continue working with Hudson Group to provide an excellent travel experience for our passengers." BWI Marshall Airport is the 22nd busiest airport in the USA, surpassing 26 million passengers in 2017, marking its third consecutive year of record growth. "Fraport and Hudson Group share the goal of exceeding the expectations of the BWI Marshall traveler," said Brett Kelly, vice president of Fraport Maryland. "They've been a long-time partner of ours and we're pleased that we'll be working together into the future."





## Airport Operations

*This section presents information on the level of operational activity at BWI Marshall; including air traffic levels by jet aircraft, runway use, and flight corridors.*

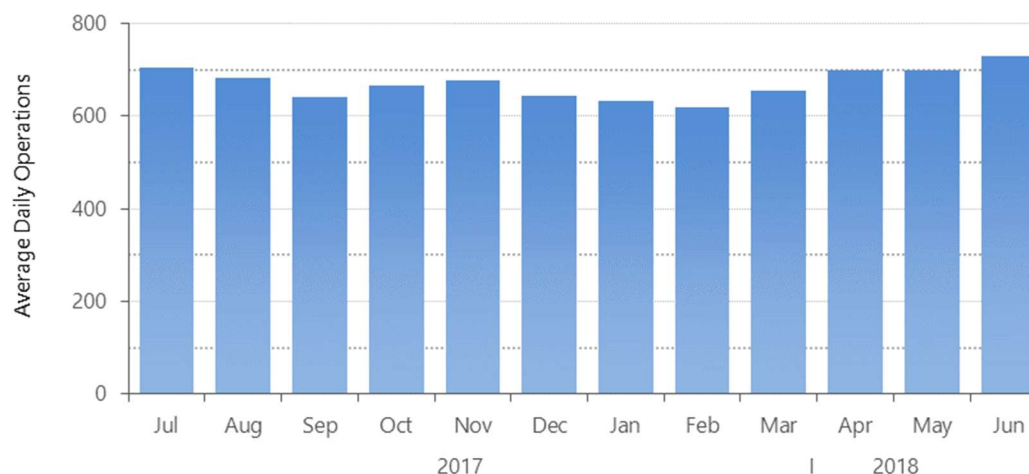


### Jet Operations and Nighttime Activity

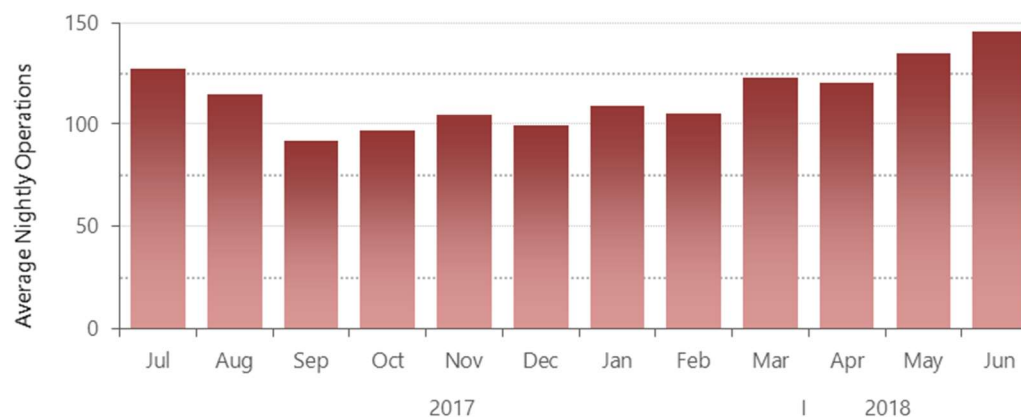
The first figure shows the average number of daily jet flights at BWI Marshall, including arrivals and departures by business jets and air carrier aircraft. The figure also presents data for the preceding nine months, for a twelve-month total. The average daily number of jet operations during the 2<sup>nd</sup> Quarter of 2018 was 708.

The next figure presents nighttime air carrier, business jets and cargo jet operations. At BWI Marshall, a nighttime operation is defined as an arrival flight or departure flight that occurs between the hours of 10 p.m. and 7 a.m. The average number of nighttime jet operations was approximately 134 per night during the 2<sup>nd</sup> Quarter of 2018.

Average Daily Jet Operations



Average Nightly Jet Operations



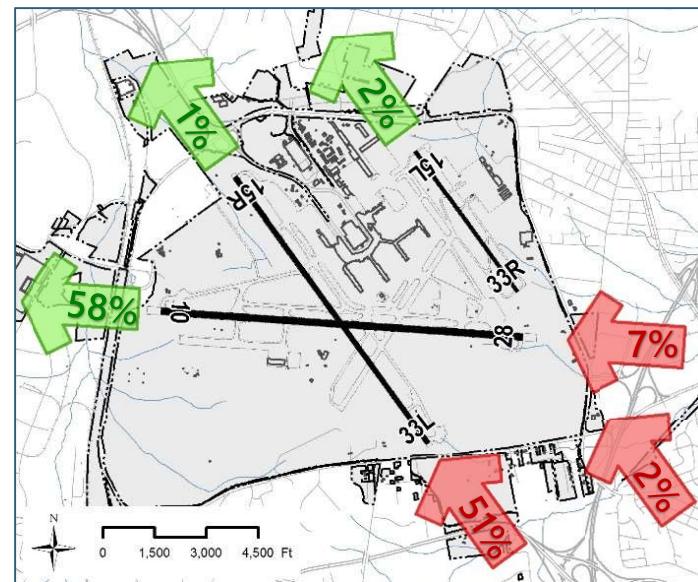
## Runway Use

The MDOT MAA maintains a preferential runway use program to minimize the aircraft noise impact on neighboring communities. For noise abatement purposes, west flow (aircraft departures to the west) is preferred. Prevailing wind speed, direction and weather factors determine the direction of air traffic flow. Aircraft usually take off and land into the wind to meet safety and operational requirements. The figures to the right show jet runway use for the 2<sup>nd</sup> Quarter of 2018.

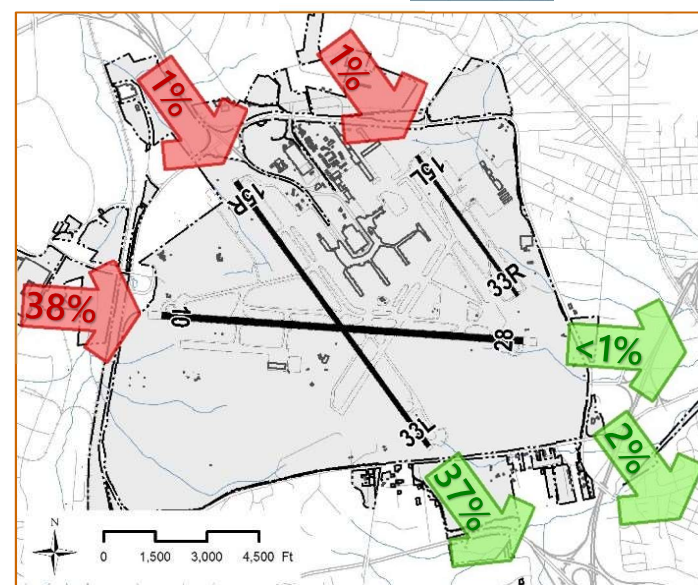
During west flow, all jet aircraft primarily depart (green arrows) from Runway 28 and arrive (red arrows) on Runway 33L, as shown in the top figure to the right. Historical trends result in annual average west flow of about 70%.

During east flow, all jet aircraft primarily depart (green arrows) from Runway 15R and arrive (red arrows) on Runway 10, as shown in the bottom figure to the right. Historical trends result in annual average east flow of about 30%.

**West Flow  
Runway Use**  
60% in Second Quarter 2018  
(Historical Annual Average of 70%)



**East Flow  
Runway Use**  
40% in Second Quarter 2018  
(Historical Annual Average of 30%)



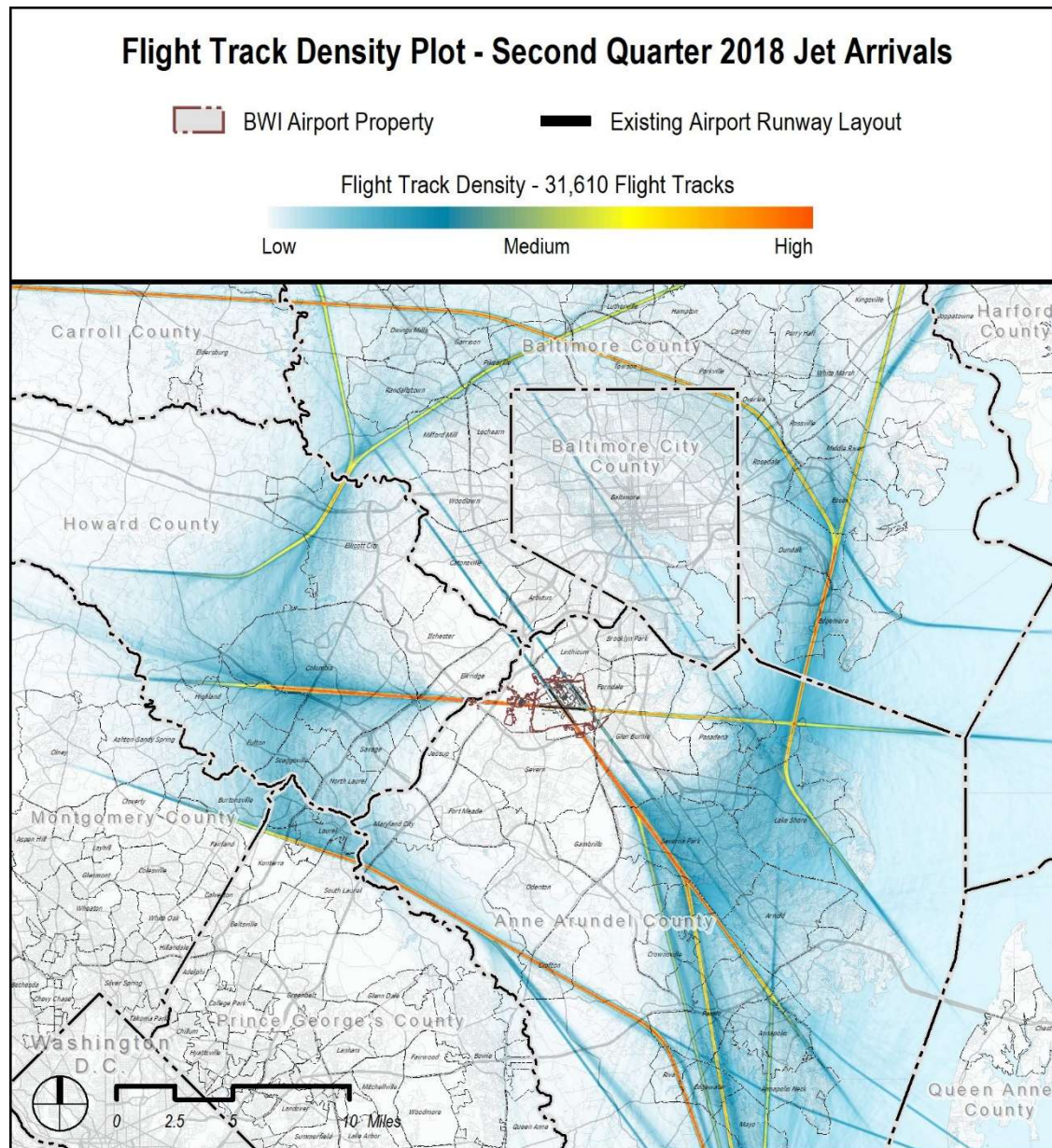


## Flight Corridors – Jet Arrivals

The following figures depict the flight corridors at BWI Marshall for jet arrivals and jet departures as derived from BWI Marshall's Noise and Operations Monitoring System (NOMS).

The figure to the right shows jet arrivals during the 2<sup>nd</sup> Quarter of 2018.

This flight track density plot uses color gradations to depict the flight track geometry, dispersion, and relative frequency of overflights. The color ranges are assigned based on the relative density of aircraft operations. Orange shows the highest density of flights, fading to yellow and then blue as the density decreases.







## Flight Corridors – Jet Departures

The figure to the right shows jet departures during the 2<sup>nd</sup> Quarter of 2018.

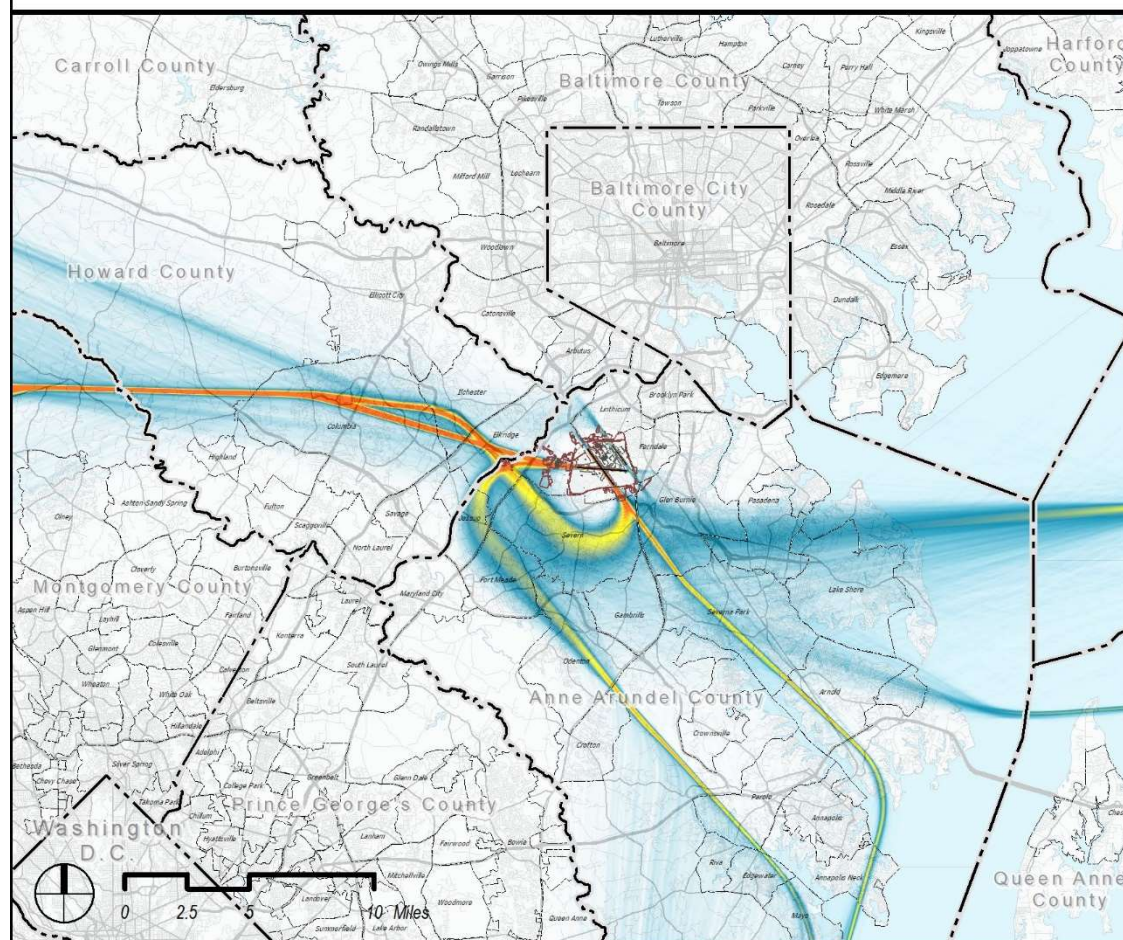
This flight track density plot uses color gradations to depict the flight track geometry, dispersion, and relative frequency of overflights. The color ranges are assigned based on the relative density of aircraft operations. Orange shows the highest density of flights, fading to yellow and then blue as the density decreases.

### Flight Track Density Plot - Second Quarter 2018 Jet Departures

 BWI Airport Property       Existing Airport Runway Layout

Flight Track Density - 31,680 Flight Tracks

Low      Medium      High





## Observance of Noise Abatement Procedures

The graphs to the right show how the major carriers and cargo operators perform on the two noise abatement procedures of most interest to the local communities. These procedures are:

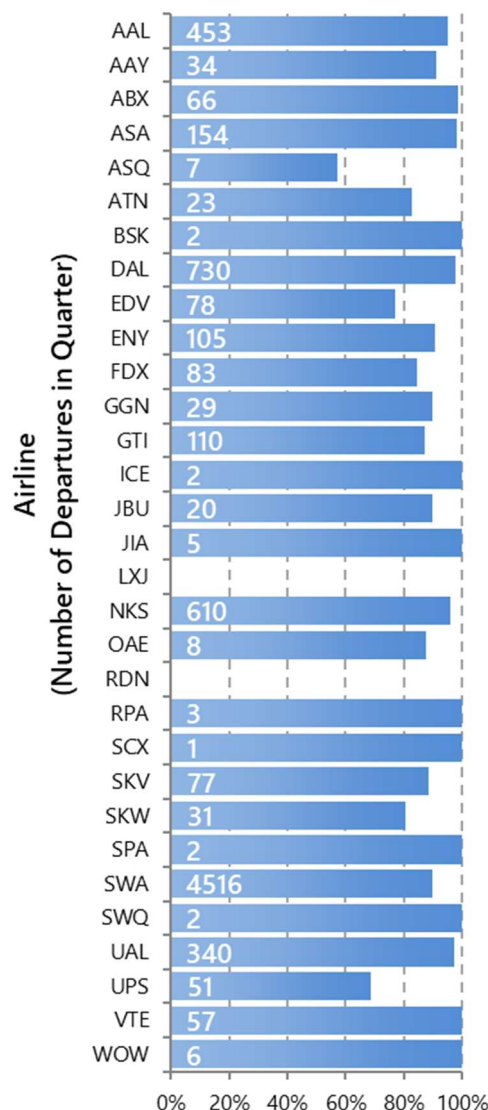
1. Runway 15R departures initiating their right turns at, but not prior to, 1 DME
2. Runway 28 departures initiating their turns at, but not prior to, 3 DME

The graphs show the percentage of flights for each airline which comply with each of the two procedures. Each bar also provides the number of operations by each airline subject to the noise abatement procedure. DME stands for Distance Measuring Equipment, and is the measured slant range from the aircraft to the navigational aid located near the center of the Airport. One DME equals one nautical mile.

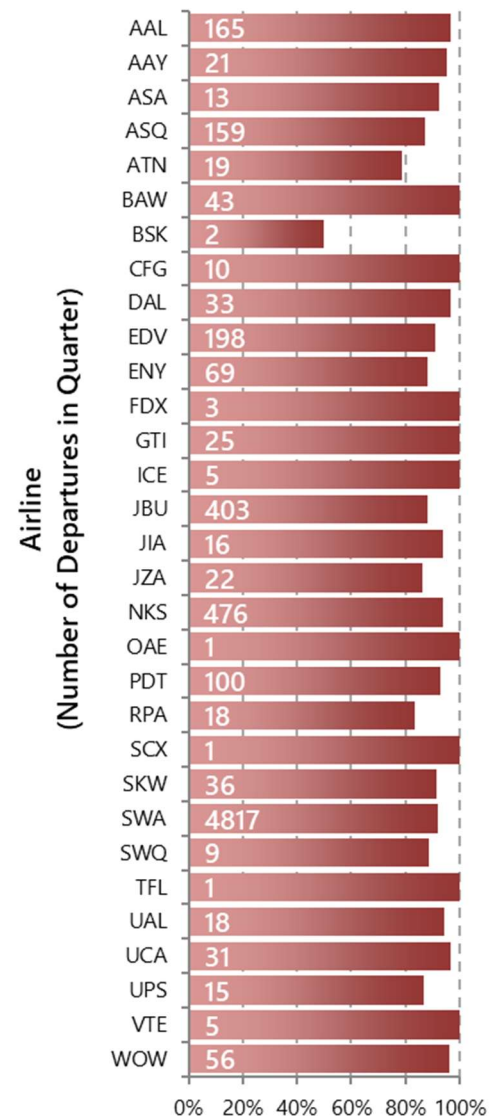
For the 2<sup>nd</sup> Quarter of 2018, 92% of departures turning right from Runway 15R initiated their turns beyond 1 DME.

For the 2<sup>nd</sup> Quarter of 2018, 92% of departures turning left from Runway 28 initiated their turns beyond 3 DME.

Percentage of Runway 15R Departures  
Turning Right Beyond 1 DME - 2<sup>nd</sup>  
Quarter 2018



Percentage of Runway 28 Departures  
Turning Left Beyond 3 DME - 2<sup>nd</sup>  
Quarter 2018







## Outreach and Community Involvement

*The MDOT MAA engages in on-going efforts to enhance the level of communication and interaction between the Airport and area residents.*

The MDOT MAA Community Outreach Programs encourage the exchange of information between the MDOT MAA and local community groups and residents. These programs supplement the efforts of the BWI Marshall Neighbors' Committee to promote the active participation of local residents in Airport issues.

Specific services or activities provided by the MDOT MAA are listed in the table to the right along with the number of events or recorded reports.



### DC Metroplex BWI Community Roundtable

*The DC Metroplex BWI Community Roundtable is an MDOT MAA initiative formed at the request of the Federal Aviation Administration (FAA).*

More information about the Roundtable, including meeting agendas, past meeting minutes, and presentation materials, is available at [www.maacommunityrelations.com](http://www.maacommunityrelations.com).

#### Public Education & Activities – 2<sup>nd</sup> Quarter of 2018

Committee Meetings	3
Community Meetings	1
Community Noise Monitoring Reports	10
Airport Zoning Permits	83
eNews Express notifications	16



### Roundtable Meetings – 2<sup>nd</sup> Quarter of 2018

- April 24, 2018
  - Progress of Capital Project Performance Based Navigation Working Group
  - Proposed FAA Procedure Designs and Q&A with FAA
- May 15, 2018
  - Proposed FAA Procedure Design Review and Discussion
  - Election of Successor Roundtable Chair and Vice Chair
- June 19, 2018
  - Navigational Fix Locations at BWI Marshall
  - Jet Arrival and Departure Track Density over Census Population Density



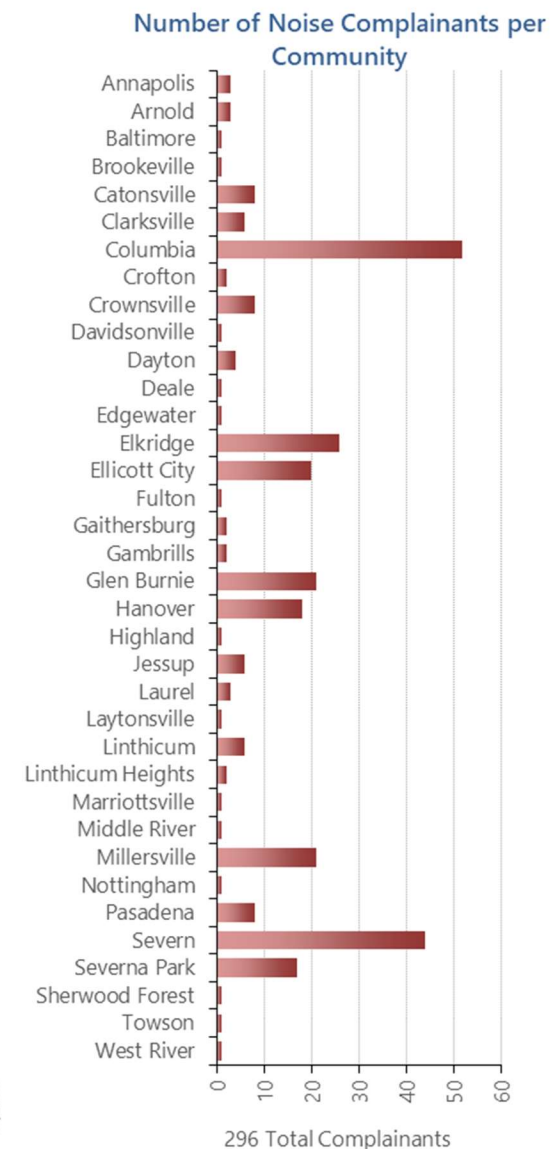
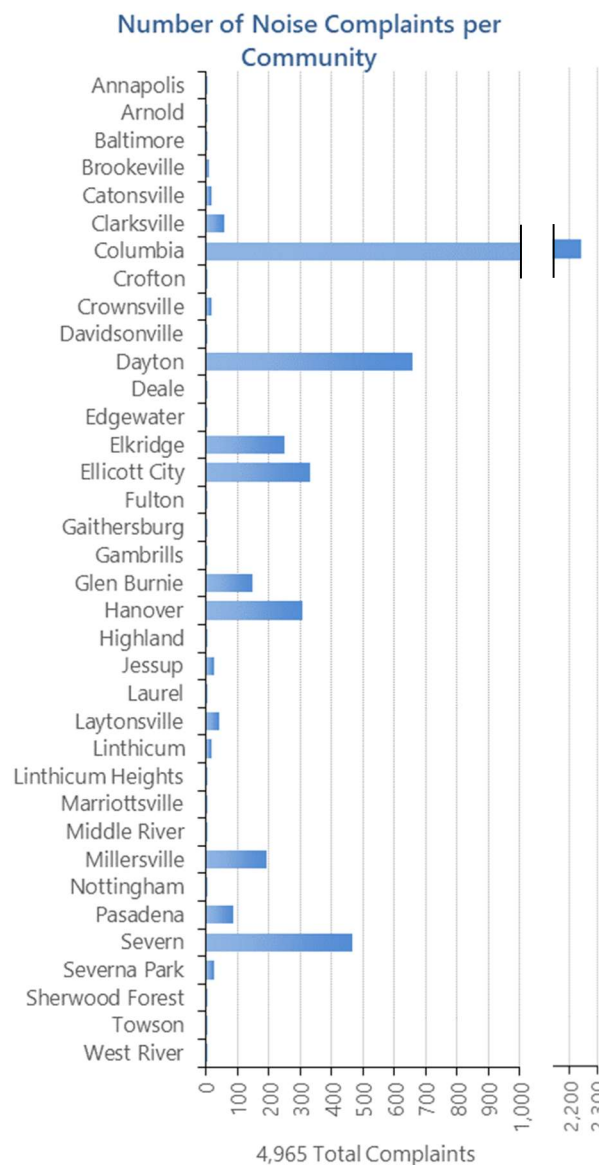
## Airport Noise Complaints

The MDOT MAA maintains a 24-hour Airport Noise Hotline at 410-859-7021. Noise complaints can also be entered online at:

<http://www.maacommunityrelations.com/content/anznoiseupdate/noiseform.php>

The graphs show the number of complaints and complainants per community for the quarter.

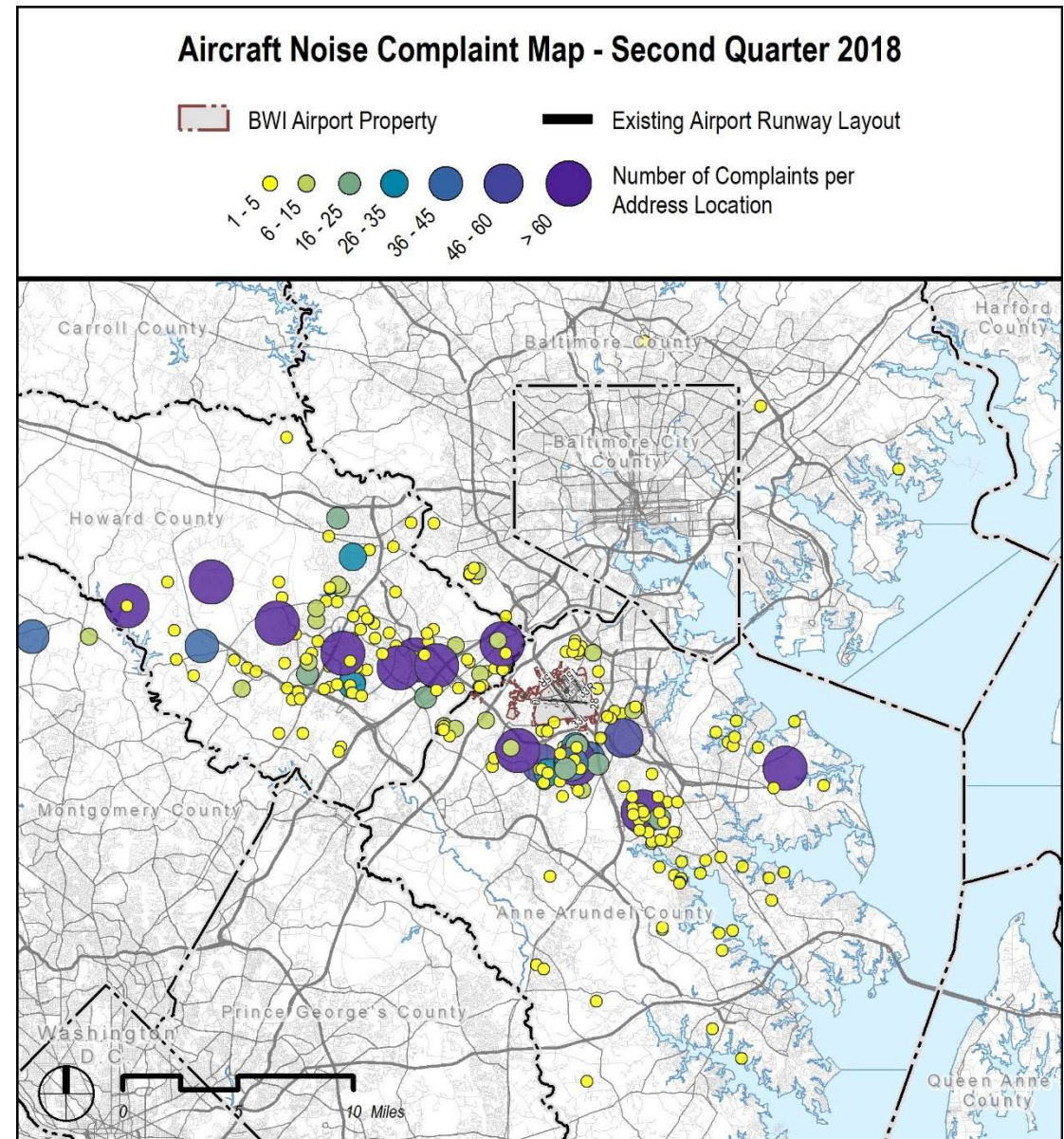
*There were 4,965 complaints (296 complainants) during the 2<sup>nd</sup> Quarter of 2018.*







The map to the right shows the locations and number of complaints for the 2<sup>nd</sup> Quarter of 2018. The size and color of each caller location denotes the number of times a complaint was submitted during the quarter. Small yellow circles depict locations with fewer complaints while large darker circles depict greater numbers of complaints.





## BWI Marshall Neighbors Committee

*The BWI Marshall Neighbors Committee was established in December 1983 and serves as a liaison between the Airport and the surrounding communities to ensure continuing and timely discussion of mutual airport and community interests.*

The Committee serves as a forum for exchanging information, ideas and suggestions. Examples of interests include ground access (highways, light rail, etc.), long-range transportation planning, operational changes (construction, maintenance and air traffic control), noise abatement and other environmental issues, parking and ground transportation, and land use planning.

## Community Enhancement Grant Program

*The Annotated Code of Maryland, Transportation §5-414 provides for an 11-member "Citizens Committee for the Enhancement of Communities Surrounding Baltimore/Washington International Thurgood Marshall Airport."*

This legislation benefits citizens living within the 1998 certified Airport Noise Zone or within two miles of the outermost noise contour by allowing them to apply for grants for transportation-related projects such as sidewalks, speed humps, street lights, etc. The grants awarded under this program are made by the Secretary of the Maryland Department of Transportation.

### BWI Neighbors Committee Community Groups




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*The Community Enhancement Grant Committee met on May 16, 2018, at this time none of the Grant Applications were approved.*

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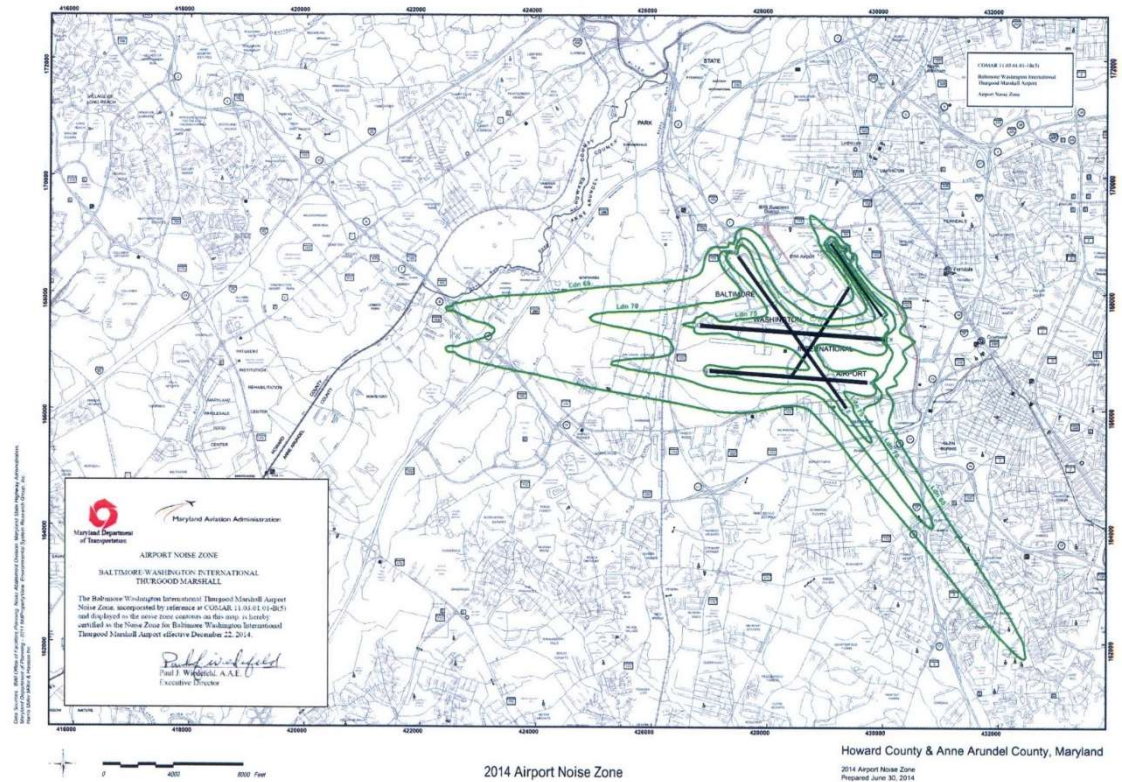




## Airport Noise Zone

The Maryland Environmental Noise Act of 1974 provides for the protection of citizens from the impact of transportation-related noise. The aviation portion of the Act requires the MDOT MAA to create a certified Airport Noise Zone (ANZ) to control incompatible land development around BWI Marshall and a Noise Abatement Plan (NAP) to minimize the impact of aircraft noise on people living near the Airport. An ANZ and NAP were first established for BWI Marshall in 1976. Both were updated in 1982, 1988, 1993, 1998, and 2007. The latest update to the ANZ became effective on December 22, 2014.

The ANZ is determined by a composite of three noise contours: a base year contour, a five-year forecast, and a ten-year forecast. The largest of the three contours in any area around the Airport determines the outline of the ANZ, thereby offering protection within the largest of the existing or future noise contours. The contours depict the Day-Night Average Sound Level (DNL) around BWI Marshall. Both the State of Maryland and the FAA require the use of the DNL metric by all airports conducting environmental studies. The current 2014 ANZ is depicted to the right.



*Further information on the ANZ can be found here:*

<http://www.maacommunityrelations.com/content/anznoiseupdate/bwianz.php>



## Noise Monitoring Program

The Noise and Operations Monitoring System (NOMS) equipment in place at BWI Marshall was installed in the late 1980s and early 1990s and is at the end of its useful life due to the age of the equipment and inability to obtain replacement parts.

The MDOT MAA is in the initial stages of implementation of the new NOMS. The figure to the right present aircraft, community, and total noise levels at the permanent noise monitors for the 2<sup>nd</sup> Quarter of 2018 from the NOMS.

The term DNL (symbolized as "Ldn" in mathematical equations) means Day-Night Average Sound Level, and is used to report aircraft, community and total noise levels. DNL is defined as the cumulative sound energy averaged over a twenty-four hour period, with ten-decibels (dB) added to noise events which occur between the hours of 10 p.m. and 7 a.m. This penalty accounts for the greater impact of noise events which occur at night. DNL is measured from midnight to midnight.

The figure to the right shows the quarterly Aircraft (A), Community (C), and Total (T) DNL values at each site, where data is available. At some sites community or environmental noise levels (street traffic and other neighborhood noises) exceed aircraft noise levels.

### Remote Monitoring Terminal Measured DNL - Second Quarter 2018

